

BEFORE THE  
PUBLIC SERVICE COMMISSION OF WISCONSIN

Joint Application of Wisconsin Electric Power       )  
Company and Wisconsin Gas LLC to Conduct a       )       05-UR-107  
Biennial Review of Costs and Rates for       )  
Test Year 2015       )

Direct Testimony  
of  
Karl R. Rábago  
for  
RENEW Wisconsin and Environmental Law and Policy Center

August 28, 2014

1   **Q.    Please state your name, address, and position.**

2   A.    My name is Karl R. Rábago. I am principal of Rábago Energy LLC, a New York  
3       limited liability company, with offices located at 44 Briary Road, Dobbs Ferry,  
4       New York.

5

6   **Q.    On whose behalf are you appearing in this matter?**

7   A.    I am testifying on behalf of the RENEW Wisconsin and Environmental Law &  
8       Policy Center (“ELPC”).

9

10  **Q.    Please describe your background and experience.**

11  A.    I have worked for more than 20 years in the electricity industry and related fields.  
12       Of note, my previous employment experience includes Commissioner with the  
13       Public Utility Commission of Texas, Deputy Assistant Secretary with the U.S.  
14       Department of Energy, Vice President with Austin Energy, and Director of

1 Regulatory Affairs with AES Corporation. I am also the Executive Director of the  
2 Pace Energy and Climate Center, at the Pace Law School in White Plains, New  
3 York. My testimony today, however, has been developed exclusively in my role  
4 as principal of Rábago Energy LLC, and is unrelated to my work at Pace Law  
5 School. I have attached a detailed resume as Ex.-RENEW-Rabago-1.  
6

7 **Q. Have you previously testified before the Public Service Commission of**  
8 **Wisconsin or any other state utility regulatory commission?**

9 A. I have submitted testimony before the Public Service Commission of Wisconsin  
10 in Docket # 6690-UR-123, the pending application by Wisconsin Public Service  
11 Corporation to change rates. I have submitted testimony, comments, or  
12 presentations in proceedings in Virginia, Georgia, Iowa, Minnesota, Michigan,  
13 Missouri, Louisiana, North Carolina, Kentucky, Arizona, Florida, and the District  
14 of Columbia. A list of appearances before state regulatory commissions is set  
15 forth in Ex.-RENEW-Rabago-2.  
16

17 **Q. Please highlight your experience with distributed energy and utility rate**  
18 **regulation.**

19 A. I have more than 20 years experience working with electric regulatory,  
20 technology, and business issues and distributed energy. As a public utility  
21 commissioner in the early 1990s, I sat on a three-person commission regulating  
22 investor-owned, cooperative, and municipal electric and telephone utilities.  
23 During that time I served as vice chair of the NARUC Energy Conservation

1 Committee. As Deputy Assistant Secretary for Utility Technologies at the U.S.  
2 Department of Energy, I was responsible for the research, development, and  
3 demonstration (RD&D) programs relating to renewable energy, high temperature  
4 superconductivity, hydrogen, and energy efficiency technologies. I have testified  
5 before and worked with Congress to grow RD&D programs funded at the  
6 Department of Energy and carried out in national laboratories, universities, and  
7 the private sector.

8 While with CH2M HILL, I co-authored electricity industry restructuring  
9 studies for both Colorado and Alaska that addressed, among many other things,  
10 potential for renewable energy and energy efficiency development in those states.  
11 At the Houston Advanced Research Center, I led a proton-exchange-membrane  
12 hydrogen fuel cell test and demonstration program, a green buildings program,  
13 and a low-income home weatherization program. I also established a regional  
14 combined heat and power technical application center funded by the US  
15 Department of Energy. While with the AES Corporation, I coordinated and  
16 supported regulatory affairs among utility and development operations in more  
17 than two dozen countries, and supported development of a voluntary carbon  
18 trading joint venture with GE Energy.

19 At Austin Energy, the 8<sup>th</sup> largest municipal utility in the country, located  
20 in Austin, Texas, I led the utility's distributed energy services division, including  
21 energy efficiency, low-income weatherization, green building and the municipal  
22 energy code, electric vehicles and emerging technologies, key accounts, market  
23 research, the municipal climate action plan, and distributed generation programs. I

1 worked with the Minnesota Department of Commerce, Public Utilities  
2 Commission, and legislature in 2013 to secure adoption and successful  
3 implementation of a Value of Solar tariff alternative to net metering in that state.  
4 Working with the Interstate Renewable Energy Council (“IREC”), I co-authored  
5 “A Regulator’s Guidebook: Calculating the Benefits and Costs of Distributed  
6 Solar Generation.”  
7

8 **PURPOSE AND SUMMARY OF RECOMMENDATIONS**

9 **Q. What is the purpose of your testimony?**

10 A. The purpose of my testimony is to demonstrate the many significant errors  
11 underpinning the wholesale attack by Wisconsin Electric Power Company (the  
12 “Company”) on customer generators. I point out the deficiencies in and adverse  
13 consequences of the proposals by the Company to dramatically raise fixed  
14 customer “facilities” charges; to impose unjustified standby/demand charges on  
15 distributed generators; to impose a new requirement for monthly netting on net  
16 metering customers; to set a de facto avoided cost rate for purchased or credited  
17 energy from customer generators, including qualifying facilities, without  
18 justification; and to impose a new unjustified facilities charge for metering,  
19 customer accounting, and customer charges.  
20

21 **Q. What is your recommendation to the Commission?**

22 A. I recommend that the Commission disapprove all of the Company’s proposals to  
23 increase so-called facilities charges and to increase or create new charges and

1 conditions on customer generators as failing in adequacy of proof and justification  
2 and contrary to public policy and principles of sound ratemaking. Given the  
3 serious policy and economic issues raised by the Company's proposals, I  
4 recommend that the Commission convene a specifically focused proceeding to  
5 fully address and understand those issues and consequences prior to accepting any  
6 utility proposals for dramatic changes in rate design.  
7

8 **THE COMPANY PROPOSAL TO INCREASE**  
9 **FACILITIES CHARGES FOR SMALL CUSTOMERS**

10 **Q. What is your understanding of the Company's proposals to raise fixed**  
11 **customer charges, which it calls "facilities charges?"**

12 A. The Company proposes to nearly double the share of Small Class customer  
13 revenues collected through fixed non-bypassable "facilities charges," going from  
14 \$.30/day to \$0.52602/day—to about \$16.00/month. This change accompanies a  
15 blending of higher cost three-phase small customers with single-phase customers  
16 into a single facilities charge, and also appears intended to reduce the Company's  
17 exposure to errors in forecasting sales volumes. The net increase to single phase  
18 residential customers of the increased facilities charge and the reduction in the  
19 rate for three-phase customers is \$79.6 million. This amount is partially offset by  
20 a small reduction in the volumetric energy rate worth about \$33.7 million. In total  
21 the Company proposes to increase rates by some \$45.9 million to small residential  
22 customers.  
23

1   **Q.     What problems does the Company say it is trying to fix with its proposal to**  
2       **nearly double the fixed customer charge for electric service?**

3   A.     Witness O'Sheasy (Direct-WEPCO WG-O'Sheasy-3-6) sets out the Company  
4       justification for the facilities charge increase as: (1) a problem of economic  
5       efficiency, (2) a problem of revenue under-recovery, (3) a problem of customers  
6       overvaluing electric energy, (4) a problem of customers overvaluing energy  
7       conservation, (5) a problem of long gestation but acute significance, and (6) a  
8       problem that threatens the Company's cost of financing.

10   **Q.     What data does the Company provide to demonstrate these problems?**

11   A.     None. Other than to say that its Cost of Service Study ("COSS") shows that not  
12       all fixed costs are recovered in its fixed charges, the Company witnesses produced  
13       no studies, surveys, analysis, or other data to demonstrate the actual existence of  
14       the alleged problems or that these problems are actually manifest in faulty rate  
15       design. Company witnesses O'Sheasy and Rogers (1) fail to quantify with any  
16       numbers or analysis the asserted economic inefficiency that attends to current rate  
17       structures,<sup>1</sup> (2) fail to quantify the purported under-recovery of revenues  
18       associated with fixed customer charges or facilities charges that they argue are  
19       currently too low, (3) fail to provide evidence that customers are under-using  
20       electric energy because they improperly consider it too valuable, (4) fail to  
21       demonstrate that current energy efficiency programs and participation rates are

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<sup>1</sup> The Company witnesses provide no guidance on exactly what scope of economic efficiency they address; whether they are concerned with societal, utility, or customer efficiency; whether they are concerned with short- or long-term economic efficiency; or on how economic efficiency should be measured.

1 excessive or not cost-effective as a result of incorrectly set customer fixed charges,  
2 (5) fail to demonstrate that the utility has suffered chronic under-recovery  
3 problems as a result of incorrectly set customer fixed charges, and (6) fail to  
4 demonstrate with evidence that the Company has suffered any adverse cost-of-  
5 financing or other threats to its financial integrity as a result of incorrectly set  
6 customer fixed charges.

7  
8 **Q. Why are these failures significant?**

9 A. These failures are significant because under generally held principles of  
10 regulatory practice, the utility has both the burden of production and persuasion in  
11 seeking to establish and modify rates. And in failing to meet those burdens, as the  
12 Company has, a proposed rate cannot be found to be just and reasonable.

13  
14 **Q. How does the Company justify the proposal to nearly double fixed customer  
15 charges for electric service?**

16 A. According to the Company, especially witnesses O'Sheasy and Rogers (Direct-  
17 WEPCO WG-O'Sheasy; Direct-WEPCO WG-Rogers), the proposal is based on  
18 its desire to guarantee recovery of sunk fixed costs in spite of variations in usage  
19 due to economic conditions, customer choice on how to use or generate energy,  
20 and the weather. The Company developed a rate justification that they assert  
21 argues for a dramatic increase in its fixed charges. Because its cost of service  
22 study ("COSS") showed that not all fixed costs are being recovered in fixed  
23 charges, the Company now seeks fixed customer charge increases in the facilities

1 charge. The Company argues that economic efficiency compels a symmetrical  
2 alignment in how the Company purports to incur costs and in how the Company  
3 should be allowed to recover them.  
4

5 **Q. Does any Company witness cite any authority for the proposition that utility**  
6 **charges should be closely aligned with the nature of costs as fixed or**  
7 **variable?**

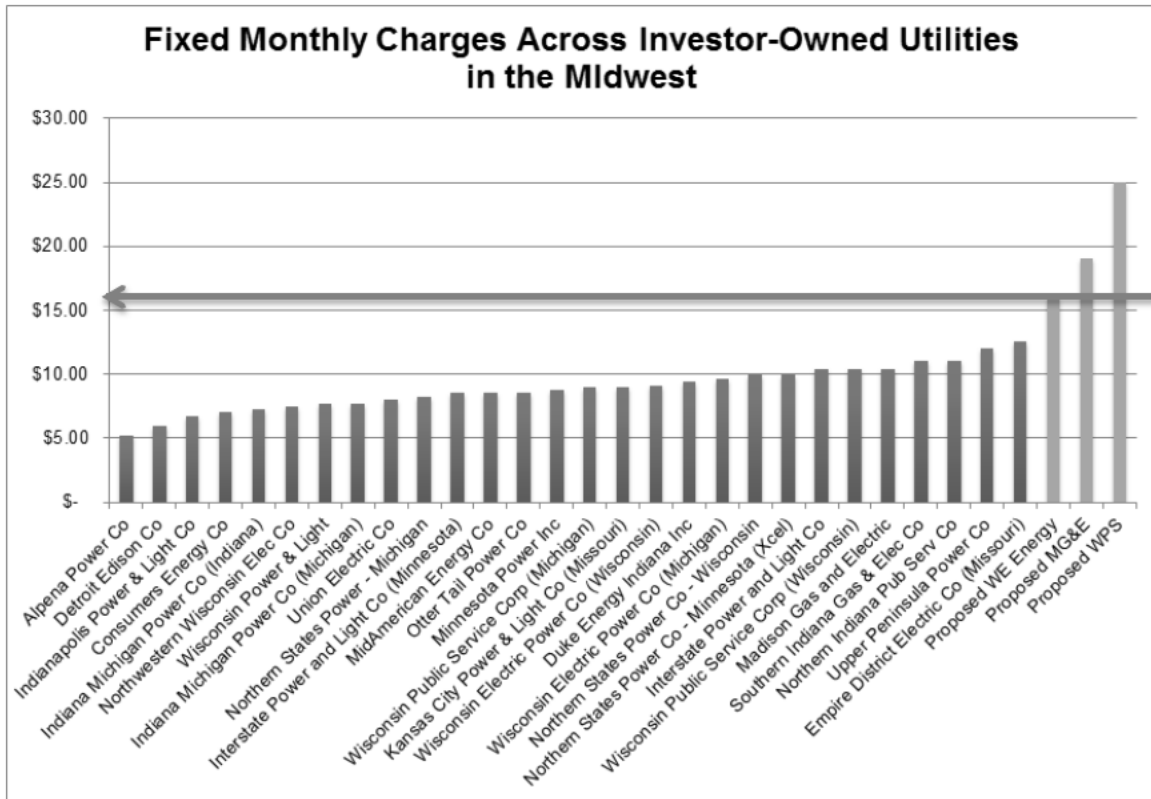
8 A. In 2-RENEW-RFP-6 (Ex.-RENEW-Rabago-3, PSC REF # 214141), Company  
9 witness O'Sheasy was asked to provide all studies, sources, and empirical data  
10 referenced or relied upon in developing the list of argued advantages associated  
11 with aligning prices with unit variable cost. In response, witness O'Sheasy  
12 provided but a single citation to a text entitled "Electricity Pricing: Engineering  
13 Principles and Methodologies," Chapter 2, December 17, 2009, by CRC Press,  
14 Author Lawrence J. Vogt, pages 57-59. The cited source includes no other  
15 references. The pages cited constitute a simplistic review of two hypothetical  
16 examples—one involving a limousine service and another involving a 25 MW  
17 generating utility with two customers. The thesis of the section "Pricing for Cost  
18 Recovery," is that the utility can reduce its risk to variability in cost recovery due  
19 to customer demand, weather, and other exogenous factors by aligning rate  
20 structures with cost structures. The cited work closes with the statement that  
21 "[m]atching pricing structures with the characteristics of the customer markets is  
22 a key factor for adequately meeting customers' electricity requirements while  
23 recovering costs and compensating investors." The cited work includes no



1 discussion of other policy factors, such as impacts of pricing on energy efficiency.  
2 Nor does the cited work address the customer perspective on rate structures, the  
3 issue of regressivity, or other policy factors.  
4

5 **Q. What is the impact of the proposed fixed customer charges?**

6 A. If approved, the charges would place customer charges for the Company's  
7 residential customers at the extreme end of such charges in the Midwest. The  
8 following graphic, produced by ELPC from data from OpenEI.org, an open-  
9 source data-sharing platform supported by the National Renewable Energy  
10 Laboratory, and the U.S. Energy Information Administration, compares the  
11 company's proposed fixed charge for residential customers against investor-  
12 owned utilities in other vertically integrated Midwestern states (Indiana, Iowa,  
13 Minnesota, Michigan, Missouri, and Wisconsin):  
14



## REVIEW OF POLICY BACKGROUND GOVERNING THE COMPANY

### PROPOSAL REGARDING FIXED CUSTOMER CHARGES

**Q. What policy principles govern a determination of whether the Company proposals regarding fixed customer charges should be approved?**

**A.** There are several policy principles at work, including:

- Under Wis. Stat. § 196.03, all rates must be just and reasonable.
- Under Wis. Stat. § 196.025, to the extent cost-effective, technically feasible and environmentally sound, the Commission shall implement the priorities of Wisconsin's State Energy Policy under Wis. Stat. § 1.12(4), including consideration of the maximum conservation of energy resources as an

1 important factor when making any major decision that would significantly  
2 affect energy usage, and shall prioritize energy efficiency, conservation, and  
3 renewable resources above all other resource options.

- 4 • Under Wis. Stat. § 196.377, the commission shall encourage public utilities to  
5 develop and demonstrate electric generating technologies that utilize  
6 renewable sources of energy.

7 In addition, utilities are generally entitled to a reasonable opportunity to earn a  
8 fair return on prudent, used and useful investments made to provide electric  
9 service.

10  
11 **Q. Do the Company's fixed customer charge proposals square with this policy**  
12 **guidance?**

13 A. No. First, the Company has a burden to produce evidence and prove that its  
14 proposals are just and reasonable. In this regard, the foundation for the  
15 Company's proposals lies in its COSS. As Company witness Rogers (Direct-  
16 WEPCO WG-Rogers) explains, development of the COSS involves three  
17 important and somewhat subjective steps—cost functionalization, cost  
18 classification, and cost allocation. While I did not review every unique decision  
19 involved in the functionalization, classification, and allocation of the Company's  
20 costs, it is important to note that reasonable people could differ on many of the  
21 imbedded decisions that purport to show the high levels of fixed costs that the  
22 Company purports to assign to small customers.

1               Second, the Company uses its COSS results to then make the unsupported  
2               argument that the broader interests of economic efficiency require that the  
3               Commission support the proposals to increase fixed customer charges based on  
4               the Company conclusion that a high percentage of the Company's costs are fixed.  
5               The Company assertion is that there is greater long run economic efficiency (for  
6               an undefined subset of society, over an undefined time period, and as measured  
7               against undefined parameters) if cost collection charged to customers is  
8               symmetrical with cost creation. This argument is too simplistic and  
9               unsubstantiated, as is the Company assertion, via witness O'Sheasy (Direct-  
10              WEPCO WG-O'Sheasy), that the Company should strive to collect all fixed costs  
11              via a fixed charge and to collect all variable costs via a variable or volumetric  
12              charge.

13              Finally, the Company proposals create significant barriers and  
14              impediments to energy efficiency, conservation, and renewables that would result  
15              in improper discrimination and in rates that do not comport with Wisconsin state  
16              energy policy.

17

18   **Q.     Why is a detrimental impact to energy efficiency, conservation, and**  
19   **renewables (especially distributed renewables) a concern?**

20   A.     Wisconsin's State Energy Policy prioritizes distributed and clean energy  
21           resources, including energy efficiency, conservation, and renewables, for very  
22           good reasons. These include:

- 1       • Distributed and clean energy resources diversify the grid and the portfolio of  
2       resources that provide valuable energy services. This diversification makes the  
3       system more economically, operationally, and financially robust. That is, they  
4       help make the grid more secure and less vulnerable to disruption due to forces  
5       beyond the utility's control. Such forces include fuel availability,  
6       environmental regulation, market volatility, severe weather, and broader  
7       economic conditions.
- 8       • Distributed and clean energy resources are cost effective in a wide range of  
9       applications today, and are on a trajectory to even greater cost-effectiveness  
10      improvements in the future. Unlike central station power plants, distributed  
11      and clean energy resources grow and improve in price as a result of  
12      manufacturing economies of scale, by which hardware and soft costs are  
13      systematically reduced through greater use.
- 14      • Distributed and clean energy resources, by their distributed character, generate  
15      more jobs in the local economy than central station system resources per unit  
16      of produced energy.
- 17      • Distributed and clean energy resources generate system wide benefits as many  
18      cost effectiveness evaluations demonstrate. These benefits extend to all  
19      customers, whether they are direct participants or not. These benefits include  
20      near-term reductions in fuel and expensive peak generation, as well as reduced  
21      wear and tear on expensive utility infrastructure. Over the longer term, right-  
22      sized distributed clean energy resources defer expensive capital investment

requirements and improve system resilience, putting downward pressure on rates.

- Distributed and clean energy resources bring private customer and non-utility investment dollars to the provision of electric services, leveraging utility ratepayer and shareholder dollars for the benefit of all customers.

**Q. How do energy efficiency and conservation in particular, produce these benefits?**

A. Wisconsin law aligns with best practices in electricity policy by prioritizing energy efficiency and conservation resources. This policy foundation comports with experience gained over decades of practice in Wisconsin, the Midwest, and the entire nation. Energy efficiency and conservation generate benefits to the utility, ratepayers, and society in general in many ways:

- Energy efficiency and conservation consistently offer the least cost resource options, regardless of whether you are testing cost effectiveness from the perspective of the utility, participants, non-participants, or society. That is, there is always an energy efficiency or conservation option that costs less than using the next marginal unit of produced energy.
- Energy efficiency and conservation result in downward pressure on rates in the short- and long-term. With savings options that are always marginally less expensive even than fuel, and easily targeted at peak energy consumption, energy efficiency saves all customers by reducing utility fuel demand, with savings in the near term and through long-term price effects. In the long term,

1 patterns of efficient energy use can extend the useful life of existing  
2 generation, transmission, and distribution infrastructure—resulting in savings  
3 in expensive capital investments by the utility on behalf of all customers.

- 4 • Energy efficiency and conservation measures, especially building  
5 improvements and investments in long-lived equipment, are persistent, often  
6 permanent, and systemic. They can be targeted to reduce consumption  
7 volatility due to economic conditions, weather, and, as discussed, fuel price  
8 volatility. They therefore improve not only the cost of service for all  
9 customers, including non-participants, but also the performance of stockholder  
10 investments.
- 11 • Energy efficiency and conservation, as a whole, show no signs of resource  
12 exhaustion or, as a group, depletion of economic cost effectiveness. In lighting,  
13 for example, there remain significant savings in replacing incandescent bulbs  
14 with compact fluorescents, and due to technological and price improvements,  
15 we now enjoy new opportunities to install LED lighting for even greater  
16 savings.
- 17 • Energy efficiency and conservation benefits are available in every economic,  
18 demographic, and geographic sector of the state. My own experience  
19 managing energy efficiency programs at Austin Energy, and in the electric  
20 utility industry over the last 24 years, is that well-structured energy efficiency  
21 programs can be designed to ensure that all customers enjoy cost-effective  
22 opportunities to participate in bill savings through energy efficiency and  
23 conservation.

- 1           • Energy efficiency and conservation generate huge, often unaccounted-for  
2           benefits in the communities where they are deployed. These resources create  
3           more jobs per unit of energy saved than are created with units of energy  
4           consumed. They are the ultimate resource for reducing risks associated with  
5           environmental regulation, energy security and reliability, interruptions in fuel  
6           supply or affordability, general economic conditions, and the weather.

7

8   **Q.    Does the Company proposal to increase fixed customer facilities charges**  
9   **account for these benefits?**

10  A.    No. The Company witnesses barely acknowledge concern about impacts on  
11       energy efficiency as a result of their plans to increase customer fixed charges.  
12       Rather, the Company is single-mindedly focused on increasing sales and revenues  
13       associated with generation and infrastructure investments displaced by reduced  
14       demand, and to a lesser degree by energy efficiency and conservation, and to a  
15       much lesser degree, customer generation. The Company proposal to tilt rates to  
16       induce consumption and discourage efficiency is an antiquated strategy that, for  
17       many good reasons, we have not seen in decades.

18

19  **Q.    How were the Company's objectives and concerns described in the**  
20  **preparation of this rate application?**

21  A.    In a report titled [REDACTED]  
22  [REDACTED]  
23  [REDACTED], and disclosed in



1 response to 2-RENEW-INT-7 CONFIDENTIAL (Ex.-RENEW-Rabago-4, PSC  
2 REF # 214488), the Company is presented with an array of rate options to address  
3 the Company's concerns about revenue recovery. These concerns are expressed as  
4 follows:

5 [REDACTED]  
6 [REDACTED]  
7 [REDACTED]  
8 [REDACTED]  
9 [REDACTED]  
10 [REDACTED]  
11 [REDACTED]  
12 [REDACTED]  
13 [REDACTED]

14 Q. **Did the Company consultants address the adverse impacts on energy**  
15 **efficiency and conservation in its preparation for this rate application?**

16 A. Yes. In addressing the disadvantages of an increase in fixed charges and a  
17 decrease in volumetric rates, the consultants reported to the Company the  
18 following:

19 [REDACTED]  
20 [REDACTED]  
21 [REDACTED]  
22 [REDACTED]  
23 [REDACTED]  
24 [REDACTED]  
25 [REDACTED]  
26 [REDACTED]  
27 [REDACTED]  
28 [REDACTED]  
29 [REDACTED]  
30 [REDACTED]  
31 [REDACTED]  
32 [REDACTED]  
33 [REDACTED]

1  
2  
3  
4

[REDACTED]

5 **Q. Does the Company report or testimony in this application address these**  
6 **disadvantages?**

7 A. No. In a Power Point presentation produced to accompany the report previously  
8 cited, entitled [REDACTED]

9 [REDACTED]

10 [REDACTED] these impacts are only described as [REDACTED]

11 [REDACTED]

12

13 **Q. Do the Company consultants quantify either the revenue recovery concerns**  
14 **or the potential impacts on energy efficiency and conservation?**

15 A. No. There is no numerical description of the purported revenue recovery problem  
16 or the potential impacts of the proposed rates on energy efficiency or conservation  
17 in any document produced in this rate application.

18

19 **PROBLEMS AND DEFICIENCIES IN THE COMPANY'S**  
20 **FIXED FACILITIES CHARGE PROPOSAL FOR SMALL CUSTOMERS**

21 **Q. Please explain the problems that the Company proposals create regarding**  
22 **fixed and variable cost allocation and economic efficiency.**

23 A. The Company asserts that when its COSS results in higher fixed costs, it should,  
24 for the sake of economic efficiency, seek to guarantee recovery of those fixed  
25 costs through fixed customer charges. The first major problem with the Company

1 proposals in this regard is that it fails to fully understand and reflect in its  
2 proposals the nature of fixed and variable costs. It is basic economics that all costs  
3 are variable over the long run. For example, even a cost traditionally regarded as  
4 fixed, such as the investment cost for an electric transformer, is variable  
5 depending on the load and nature of load on the electric system where it operates.  
6 Strategically deployed distributed energy resources such as demand response,  
7 conservation, and distributed generation can all defer the replacement or extend  
8 the useful life of such equipment. That is, variation in energy and demand impact  
9 the actual cost of the transformer. Rates set to recover the investment cost of a  
10 transformer should not automatically be set as fixed charges, especially if such  
11 charges would act as a disincentive to utility and customer investments in  
12 distributed energy resources, that, over the long run, would be the more cost-  
13 effective option. To say that utility charges must be fixed or variable in alignment  
14 with the nature of costs as fixed or variable simply invites the broader policy  
15 question of which time period should be considered for determining whether costs  
16 are fixed or variable—a question that the Company witnesses did not explore.

17 In addition, the cost driver behind each fixed cost component must be  
18 carefully examined. In some cases, the cost driver for a fixed cost, such as an  
19 expensive peaking plant, will be primarily driven by volumetric behavior during  
20 limited operational hours. Simply stated, the heavy late afternoon air conditioning  
21 load of residential and commercial customers is often recognized as a driver for  
22 expensive peaking plants and is recognized in cost allocation decisions that are  
23 part of the COSS. In this case, the cost recovery mechanism of a tiered volumetric

1 or demand and/or time of use charge sends a more precise price signal to  
2 customers than lumping the capacity cost of the peaker into fixed customer  
3 charges. The Company does not assert or provide evidence that its fixed customer  
4 charge proposal reflects this kind of careful analysis.

5  
6 **Q. Do the Company witnesses offer guidance in applying their recommendation**  
7 **that utility fixed and variable charge structures should mirror fixed and**  
8 **variable cost causation?**

9 A. Even the Company's lead rate design witness, O'Sheasy, backs away from this  
10 simplistic assertion in response to a question from the Citizens Utility Board of  
11 Wisconsin ("CUB") (2-CUB-Inter-13)(Ex.-RENEW-Rabago-5, PSC REF #  
12 213296) where he confirms only that there exists some economic literature to  
13 support the notion that prices set at marginal costs can improve economic  
14 efficiency. He cites no authority for the asserted proposition that utility rates and  
15 charges should reflect fixed and variable drivers. Witness O'Sheasy further  
16 conceded that even short- and long-run marginal costs are not definitive in setting  
17 tariff rates, but only a consideration.

18  
19 **Q. Are the Company efforts to guarantee fixed costs recovery reasonable?**

20 A. Not in and of themselves; and certainly not without consideration of important  
21 Wisconsin energy policy. To a large extent, the Company witnesses conflate fixed  
22 costs and sunk costs by attempting to create a charge that guarantees sunk cost  
23 recovery (with a return). Prudently incurred sunk costs associated with facilities

1 deemed used and useful in the provision of electric services are generally  
2 recoverable, but the nature of these costs as “sunk” provides, in itself, no guidance  
3 as to how such costs should be recovered, that is, whether they should be  
4 recovered through fixed or variable charges. While using increased customer  
5 charges as a mechanism for recovery of all sunk and fixed costs might serve the  
6 short-term interests of the Company and its shareholders, it is not necessarily in  
7 anyone’s best long-term interest. Traditional ratemaking principles require a  
8 reasonable opportunity to earn a fair return, not a guarantee of such opportunity  
9 under terms exclusively to the Company’s liking. The primary determinants of  
10 just and reasonable rate design are not simply or even primarily the way in which  
11 the utility incurs costs, but include important considerations of policy, fairness,  
12 and economic efficiency over both the short and long term. Therefore, it is  
13 appropriate to review the Company proposals in light of their potential impact on  
14 state energy policy goals, especially regarding priority resources such as  
15 efficiency, conservation, and renewables. It is also appropriate to consider what  
16 economic signals such rate proposals send to the utility itself, and whether the  
17 resulting incentives are also aligned with policy. I would also note, and will later  
18 describe, efforts in a number of states to explore performance-based alternatives  
19 to traditional cost-of-service ratemaking as a means for better aligning public,  
20 regulatory, and utility objectives—an effort that could be delayed or frustrated  
21 through adoption of the Company’s proposals. These are all issues that should be  
22 addressed first in an inquiry focused on these important issues as they impact all  
23 Wisconsin utilities and electric utility customers, and only later implemented in

1 conforming rate proposals. The Company approach puts ratemaking ahead of  
2 policy, resulting in likely confusion in both.

3

4 **Q. What are the likely impacts of the Company's fixed customer charges on**  
5 **Wisconsin's State Energy Policy priorities of efficiency, conservation, and**  
6 **renewable energy?**

7 A. The Company fixed customer charges adversely impact both past and future  
8 investments in energy efficiency, conservation, and renewable energy, especially  
9 customer investments in these resources. As I explained, such negative impacts  
10 compromise a range of benefits that growth in reliance on these resources brings  
11 to all customers. In a future test year jurisdiction such as Wisconsin, the policy  
12 decision has been made that utilities bear the burden of producing reasonable  
13 forecasts of future demand for energy and capacity, taking into account trends in  
14 customer-owned efficiency, conservation, and renewables. Guaranteeing cost  
15 recovery through the fixed monthly facilities charges relieves the utility of this  
16 obligation to plan by ensuring revenue recovery regardless of forecast accuracy.  
17 Moreover, it sends the wrong price signal to customers by reducing the benefits of  
18 using less energy. The implied policy change in such a shift should be addressed  
19 in a separate focused inquiry before a decision is made in company-specific rate  
20 case.

21

22

1   **Q.     How would the proposed fixed customer facilities charges impact past**  
2       **investments in efficiency, conservation, and renewables?**

3   A.     Customers who have invested in distributed generation, and customers who have  
4       made investments in energy efficiency will be penalized by both the fixed charge  
5       increase and the energy charge decrease proposed. These customers have  
6       investment-backed expectations regarding recovery of their investments at homes  
7       and businesses across the state of Wisconsin. The proposed changes in fixed and  
8       volumetric charges will deprive these customers of their fair and reasonable  
9       expectations of returns by increasing the economic payback term on those  
10      investments. Such changes represent economic inefficiencies not addressed by the  
11      Company in its proposal. Simply stated, the Company proposals reduce the value  
12      of the energy savings and create a new, unavoidable charge that punishes most the  
13      customers with the greatest investments in clean and renewable energy options.

14  
15   **Q.     Are net metering customers with distributed generation among those you are**  
16       **describing?**

17   A.     Yes. Net metering customers are exactly the kind of distributed generation  
18       customers I am describing. These customers also often make associated  
19       investments in green building and energy efficiency to maximize the value of  
20       their significant distributed generation investments. The Company proposals pull  
21       the economic rug out from under these customers without sound justification.  
22       Neither is it clear that the purported revenue shortfall faced by the Company  
23       approaches anything like a threat to the financial integrity of the utility. In the

1 absence of a more tempered proposal and any objective evidence of significant  
2 revenue shortfall specifically caused by these customer generators, the Company  
3 proposals are not only unfair, but appear to be both punitive and preemptory.  
4

5 **Q. Based on these impacts to past investors in energy efficiency, conservation,**  
6 **and distributed generation, what is your recommendation?**

7 A. Given these potential adverse impacts on past energy efficiency (including fuel  
8 switching), conservation, and distributed generation investors as well as the  
9 failure to provide adequate substantiation that the proposals are just, reasonable  
10 and not unduly discriminatory, the Commission should reject the Company fixed  
11 facilities charge proposals.  
12

13 **Q. Can you please detail the likely prospective adverse impacts and problems**  
14 **associated with the Company's fixed facilities charge proposals?**

15 A. There are several prospective problems that could emerge from adoption of the  
16 Company's fixed customer charge proposals. These include:

- 17 • Undercutting the economic benefits that support energy efficiency,  
18 conservation, and distributed generation, including distributed renewable  
19 energy generation;
- 20 • Undercutting the value proposition behind green building;
- 21 • Undercutting the economic benefits that support energy code improvements;
- 22 • Regressive impacts on low use customers, including low income customers;



- 1       • Undercutting the economic price signals that support tiered rates and time-of-  
2       use rates;
- 3       • Cross subsidization of high peak energy users by low peak users;
- 4       • Improving the economics of “grid defection;”
- 5       • Creating a strong incentive for utility capital investments and reduced  
6       incentive for more economically robust investment and operations strategies;
- 7       • Creating a disincentive for customer service and rate plan innovation by the  
8       Company; and
- 9       • Establishing a new, lower standard for utilities proposing rate design changes  
10      that dilutes the burden of producing and proving the need for and actual data  
11      to support such fundamental rate design changes.

12

13   **Q.    Please explain the potential adverse impacts on energy efficiency,**  
14   **conservation, and renewable energy.**

15   A.    To the extent cost-effective and technically feasible, the state of Wisconsin  
16   prioritizes energy efficiency, conservation, and renewable energy resources above  
17   all other generation resources. The proposed realignment of residential and small  
18   commercial rates increases the minimum bill for both classes. Residential and  
19   small customer fixed bills would increase by the equivalent of 48 kWh per month,  
20   to the equivalent of 115 kWh per month. That is, even with zero consumption, the  
21   residential customer faces an even higher utility tax that, like death, could not be  
22   avoided, no matter how little energy the customer uses. With this large minimum  
23   bill, many energy efficiency measures will likely become uneconomic and even

1        futile. Customers may no longer find it cost effective to pay higher up-front costs  
2        for energy efficient lighting or to weatherize their homes. Similarly, distributed  
3        generation investments, which themselves have high relative fixed costs that are  
4        recovered through volumetric rate savings, will be deferred, undersized, or  
5        cancelled. Even though customer energy efficiency, conservation, and distributed  
6        generation will likely reduce both short- and long-run utility fixed cost  
7        requirements, the Company proposes no analysis of those contributions and  
8        considers no rate benefits to customers associated with those impacts.

9

10    **Q.    How does the Company address the adverse impacts on energy efficiency of**  
11    **its proposed rate changes?**

12    A.    Company witness O'Sheasy offers only a bootstrapping argument that if rates  
13        were changed to be more economically efficient as he defines the term, then  
14        energy efficiency installed under those rates would also be more efficient.  
15        Witness O'Sheasy offers only speculative assertions that there may be inefficient  
16        market behavior resulting from the pricing structure reflected in current Company  
17        rates. He offers no studies of elasticity of demand or consumption behavior to  
18        support this inference,<sup>2</sup> and instead asserts that customers make electricity use and  
19        purchase decisions by comparing price to value. He cites no analysis or studies  
20        relating to customer energy efficiency behavior and rates, and offers no evidence  
21        of the specific impacts likely associated with current or proposed rates.<sup>3</sup>

22

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<sup>2</sup> 2-RENEW-RFP-4 (Ex.-RENEW-Rabago-6, PSC REF # 214139)

<sup>3</sup> 2-RENEW-RFP-5 (Ex.-RENEW-Rabago-7, PSC REF # 214140)

1 **Q. Please explain the potential adverse impacts on green building and energy**  
2 **codes.**

3 A. Green building is the business of designing, constructing, and rehabilitating the  
4 built environment to minimize adverse impacts associated with construction, and  
5 more importantly, occupation and use of buildings. Energy codes seek to codify  
6 the best practices in green building to improve the energy efficiency of the  
7 existing and new buildings. Both have the intention of reducing ownership costs,  
8 improving operational affordability, and supporting economic development  
9 through increases in disposable income and in the building trades. The science  
10 and practice of green building is developing rapidly. Across the United States,  
11 architects and builders are developing zero energy and zero net energy homes,  
12 apartments, housing developments, and commercial buildings. The proposed  
13 fixed customer facilities charges create an added cost of home and small  
14 commercial building occupation of \$84 per year. As a result, today's green  
15 building and energy code improvements will under-perform against design and be  
16 less cost-effective. Because of the accompanying energy charge reductions,  
17 incremental energy savings will also be less valuable, and therefore less cost-  
18 effective. These impacts represent additional society-wide economic *inefficiency*  
19 resulting from the Company proposals that should be explored in a focused policy  
20 proceeding.

1     **Q.     Please explain the potential regressive impacts of the Company’s proposals.**

2     A.     The term “regressive” refers to an economic policy that imposes proportionally  
3           greater charges on low-income consumers. Regressive impacts from taxes like the  
4           proposed fixed facilities charges create economic inefficiency by increasing  
5           disposable income inequality and limiting economic mobility. The Company  
6           proposals significantly reduce the ability of low use, and often, low income  
7           customers to manage the economic impact of their electricity use downward.  
8           Company witness Rogers confirms that under the Company proposals, “[t]hose  
9           customers [facing] higher percentage bill increases are the smaller customers,  
10          who have rather small bills to begin with.” He states that 35% of customers would  
11          have increases of less than 5%, that 12% of customers would have increases  
12          between 5% and 10%, and another 12% of customers would have increases of  
13          over 10%. The addition of \$84 in electricity bills for these customers is certainly  
14          significant, and as explained, makes energy efficiency efforts even more difficult  
15          for these hard-to-reach customers.

16  
17    **Q.     Please explain the potential adverse impacts on rates designed to encourage**  
18    **reductions in peak consumption.**

19    A.     Across the United States, utilities and regulatory commissions are advancing rate  
20          design innovations designed to send economic price signals to peak energy users  
21          that encourage reduced consumption when the cost to serve demand is greatest.  
22          The Company’s proposed rate changes frustrate this opportunity in its service  
23          territory. First, the rates would send the confusing message that significant efforts

1 to reduce consumption can never reduce electric bills below the minimum tax rate  
2 imposed by the fixed customer charges. Second, by reducing the value of  
3 reducing energy consumption through the large volumetric charge reductions in  
4 favor of guaranteed sunk cost recovery, the Company proposals mean that  
5 customers with high peak demand are likely subsidized for their usage. Moreover,  
6 the lower energy charge reduces the efficacy of tiered and time of use rates by  
7 lowering the price signal that accompanies base usage levels, and, in conjunction,  
8 the reasonable level of higher tier or time of use rates.

9

10 **Q. Please explain how the Company’s proposals might improve the economics of**  
11 **grid defection.**

12 A. Grid defection is a term coined by the Rocky Mountain Institute in a recently  
13 published study that suggests that customers will increasingly “disconnect” from  
14 the grid when three conditions occur simultaneously. These conditions are (1)  
15 decreasing costs of distributed generation, (2) decreasing costs of electricity  
16 storage, and (3) increasing unavoidable costs. The conditions that favor grid  
17 “defection” or “disconnection” go beyond the mere interconnection of distributed  
18 generation to include the bundling of distributed storage with generation to  
19 effectively separate the customer from the grid. As explained by the study’s  
20 authors:

21 Equipped with a solar-plus-battery system, customers can take or leave  
22 traditional utility service with what amounts to a “utility in a box.” . . .  
23 This “utility in a box” represents a fundamentally different challenge for  
24 utilities. Whereas other technologies, including solar PV and other  
25 distributed resources without storage, net metering, and energy efficiency  
26 still require some degree of grid dependence, solar-plus-batteries enable

1 customers to cut the cord to their utility entirely. . . . Notably, the point at  
2 which solar-plus-battery systems reach grid parity—already here in some  
3 areas and imminent in many others for millions of U.S. customers—is  
4 well within the 30-year planned economic life of central power plants and  
5 transmission infrastructure. Such parity and the customer defections it  
6 could trigger would strand those costly utility assets. Even before mass  
7 defection, a growing number of early adopters could trigger a spiral of  
8 falling sales and rising electricity prices that make defection via solar-  
9 plus-battery systems even more attractive and undermine utilities’  
10 traditional business models.

11 (Ex.-RENEW-Rabago-8)

12 The financial services and analysis firm, Morgan Stanley, went further in a  
13 recent report, citing utility fixed charges as one major factor that could increase  
14 the likelihood of grid defection over the next decade. The Morgan Stanley report  
15 concluded, “[t]he higher the fixed charge required of distributed generation  
16 (primarily solar) customers, the greater the potential that customers purchase  
17 batteries on a large scale and go completely off the grid.” (Ex.-RENEW-Rabago-9  
18 and Ex.-RENEW-Rabago-10).

19  
20 **Q. Why should the Commission care about the economics of grid defection?**

21 A. The Company proposal is shortsighted, and the Commission should not buy into  
22 the Company’s arguments. Increased fixed customer charges, while creating a  
23 disincentive for energy efficiency and distributed generation for grid-connected  
24 customers, also create an increasingly compelling economic case for grid  
25 defection. Grid defection is undesirable and rates that encourage it should be  
26 avoided for two reasons. First, when customers disconnect or substantially  
27 disconnect from the grid, they deny the larger body of ratepayers and the State the  
28 benefits of energy produced and saved by customer-generators through their own

1 private investments in distributed generation—that is, connecting customers to the  
2 grid allows society to reap benefits from private customer investment, something  
3 often described as “network effects.” Second, to the extent that high fixed  
4 customer charges and lower energy charges encourage grid defection, they also  
5 accelerate the very problems the rate changes were aimed to address—the loss of  
6 revenues that would otherwise cover fixed cost investments that benefit all  
7 ratepayers and the grid.

8

9 **Q. What impact do the Company’s proposed rate changes have on the utility**  
10 **itself?**

11 A. Approval of the Company’s requested increased fixed customer charges and  
12 accompanying volumetric rate decreases would send exactly the wrong regulatory  
13 signal to the utility at this pivotal time in the electric industry. The Company’s  
14 proposals are, as I have explained, backward looking efforts to secure guaranteed  
15 recovery of sunk costs. Manipulating rates through fixed charges creates an  
16 incentive for increased sales, a fact not lost on the Company, to be sure. But this  
17 effort is at odds with more efficient use of energy and broader improvements in  
18 the energy efficiency in the electricity system. The Company proposals fail most  
19 dramatically in their impacts on the future of electric service in Wisconsin. The  
20 utility industry is, across the nation, undergoing a move toward a fundamental  
21 transformation. This transformation involves a transition from a central station,  
22 high fixed cost business model to a more robust, dynamic, and flexible business  
23 model that embraces two-way and even three-way flows of energy and value, and

1 that embraces, rather than shuns, a growing contribution of customer and  
2 distribution system sited distributed energy resources. The Company's proposals  
3 are an overt effort to forestall this inevitable transformation, and if approved,  
4 would delay the realization of broader economic, efficiency, and environmental  
5 benefits available to businesses and ratepayers in Wisconsin. The Company  
6 proposal asks that the Company be insulated from natural and real market  
7 volatility inherent in today's electricity markets and operations. Approval of the  
8 Company's proposals would send the strong regulatory signal that more efficient  
9 use of energy can be economically penalized, and that distributed generators can  
10 be taxed by the utility regardless of actual cost of service impacts. Rather than  
11 encouraging the Company to increase its sunk fixed costs, the Commission should  
12 encourage the Company to collaborate in the development of innovative proposals  
13 that accelerate progress toward achieving Wisconsin's State Energy Policy  
14 priorities and utility profitability at the same time.

15  
16 **Q. How are other states and utilities addressing the major changes confronting**  
17 **the industry?**

18 A. Some utilities are approaching the issues in the same manner as the Company,  
19 proposing preemptive rate attacks on energy efficiency, conservation, and  
20 distributed generation. This kind of approach has helped earn an industry-wide  
21 downgrading of bonds by Barclays Bank (Ex.-RENEW-Rabago-11). In other  
22 states, utilities and regulators are undertaking careful analysis and planning aimed  
23 at facilitating a smooth transition that benefits the state economy, customers, and



1 the utilities and their investors. Notable examples of these initiatives include the  
2 Minnesota Energy Future Study (Ex.-RENEW-Rabago-12), the Minnesota e21  
3 Initiative, in which Xcel is participating (Ex.-RENEW-Rabago-13), the  
4 Massachusetts Grid Modernization proceeding (Ex.-RENEW-Rabago-14), and the  
5 New York “Reforming the Energy Vision” proceeding (Ex.-RENEW-Rabago-15).  
6

7 **Q. Are there reasons why customers might prefer the Company’s proposed rate**  
8 **changes?**

9 A. Not that I’m aware of. While some residential and commercial customer groups  
10 would doubtless prefer electricity bills that resembled cable television bills with  
11 high base monthly charges and optional incremental charges—“basic cable plus  
12 pay-per-view” arrangements—that is not what the Company is proposing. As  
13 explained, the Company is not proposing a fixed charge for a basic level of  
14 service, but instead, a very high connection tax. The Company’s proposal seeks  
15 Commission approval for what the Company wants, with little regard for  
16 customers. One important reason that the Commission should disapprove the  
17 Company’s requested fixed customer charges is to encourage the Company to  
18 propose alternative rate structures that affirmatively consider customer  
19 preferences and the system-wide benefits of reducing energy consumption, and  
20 not just the Company’s revenue recovery goals. Approval of the Company’s  
21 proposed rate changes would delay such important rate and service innovations.  
22

**THE COMPANY PROPOSAL TO IMPOSE NEW  
STANDBY AND FACILITIES CHARGES ON CUSTOMER GENERATORS**

**Q. What new charges does the Company propose to impose on customer generators?**

A. In addition to the changes in customer fixed facilities charges and volumetric energy rates, the Company singles out customer generators for additional charges derived from unsupported assumptions in this case, and with willful ignorance of the results of a valuation study performed for the Company in 2009.

**Q. What are the proposed additional charges on customer generators?**

A. The Company proposes a full raft of new and modified charges on customer generators, with special burdens to be imposed on customer generators who use the net metering structure. These include: (1) a new demand/standby charge based on the size of the customer generation system, to be set at \$3.794/kW, and without regard for the actual metered production of the facility; and (2) a facilities charge set at \$0.10858/day and derived from metering, customer accounting, and customer service costs associated with small customers in general.

**Q. How is the new demand/standby charge derived?**

A. The Company witnesses O'Sheasy and Roberts characterize and calculate these charges based on the assumption that the energy and capacity value of distributed generation does not exceed the seasonal LMP plus a small adjustment for line losses and some marginal transmission costs. From this platform, witness

1 O'Sheasy (Direct-WEPCO WG-O'Sheasy-21) then predicts "over-investment in  
2 self-generation," and an undocumented phenomenon of "revenues falling faster  
3 than costs." Given the lack of current analysis underlying the proposed charges,  
4 the proposals by the Company appear confiscatory and punitive.

5  
6 **Q. How are the new facilities charges for customer generators derived?**

7 A. Company witness Rogers implies in his direct testimony (Direct-WEPCO WG-  
8 Rogers-65) that the new facilities charge for customer generators is offset by an  
9 elimination of the previous "extra meter charge," but provides no detail on the  
10 amount of such an offset, nor any explanation as to why the new charge more  
11 accurately represents the cost to serve customer generators.

12  
13 **Q. Does the Company offer data to demonstrate costs associated with standby  
14 service, with revenue shortfalls, or other costs associated with customer  
15 generators?**

16 A. The Company has no current data relating to the actual cost of providing standby  
17 service for customer generators.<sup>4</sup> The Company has performed no current analysis  
18 or calculations that address the capacity value of solar PV resources since it  
19 commissioned a study value analysis in 2009.<sup>5</sup> The Company performed no  
20 company-specific analysis of integration or operation costs associated with

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<sup>4</sup> See 1-TASC24 (Ex.-RENEW-Rabago-16, PSC REF # 213917): "The Company has not prepared any analysis to assign capacity to specific tariffs in order to determine the annual cost of capacity for a specific group of customers."

<sup>5</sup> 1-RENEW-RFP-2 (Ex.-RENEW-Rabago-17, PSC REF # 213885)

1 distributed PV systems operations.<sup>6</sup> The Company conducted no analysis for this  
2 rate case to determine if the operation of solar PV generation created any  
3 variability-related impacts.<sup>7</sup> The Company did not conduct a cost of service study  
4 for customer generators or consider how the current COSS results should be  
5 adjusted for customer generators.

6

7 **Q. Does federal law and regulation provide additional guidance that the**  
8 **Commission should consider in evaluating the Company’s proposal?**

9 A. Yes. Under the federal Public Utility Regulatory Policy Act of 1978 (“PURPA”)  
10 and related federal regulations, utilities bear a responsibility to charge only just  
11 and reasonable rates to “qualifying facilities,” such as solar customer-generators  
12 that would be impacted by the Company’s proposed standby charge. Federal  
13 Energy Regulatory Commission (“FERC”) regulations implementing PURPA  
14 require that utilities sell power to qualifying facilities, and that the rates for such  
15 sales “(i) . . . be just and reasonable and in the public interest; and (ii) . . . not  
16 discriminate against any qualifying facility in comparison to rates for sales to  
17 other customers served by the electric utility.”<sup>8</sup> Utilities are also required to offer  
18 back-up power to qualifying facilities, on the condition that the rates for sales of  
19 such back-up or maintenance power cannot be “based upon an assumption (unless  
20 supported by factual data) that forced outages or other reductions in electric

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<sup>6</sup> 1-RENEW-RFP-8 (Ex.-RENEW-Rabago-18, PSC REF # 213891)

<sup>7</sup> 1-RENEW-RFP-9 (Ex.-RENEW-Rabago-19, PSC REF # 213892)

<sup>8</sup> 18 C.F.R. § 292.305(a) (2014); see also 16 U.S.C. § 824d(a) (2012) (“All rates and charges made, demanded, or received by any public utility for or in connection with the transmission or sale of electric energy subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges shall be just and reasonable....”).

1 output by all qualifying facilities on an electric utility’s system will occur  
2 simultaneously, or during the system peak, or both...”<sup>9</sup>

3 The Supreme Court has stated that power sales to qualifying facilities  
4 must follow traditional utility ratemaking principles—namely, cost-of-service rate  
5 regulation. *Am. Paper Inst. Inc. v. Am. Elec. Power Serv. Corp.*, 461 U.S. 402,  
6 415 (1983) (citing H.R. Rep. No. 95-1750, at 98 (1978) (Conf. Rep.)); see also  
7 FERC Order No. 69, 45 Fed. Reg. 12,214, 12,228 (Feb. 25, 1980) (“This section  
8 contemplates formulation of rates on the basis of traditional ratemaking (i.e., cost-  
9 of-service) concepts.”). The House conference report cited by the Supreme Court  
10 elaborated on this principle:

11 Here the phrase “just and reasonable” is intended to refer to  
12 traditional utility ratemaking concepts. The conferees do not intend  
13 that the cogenerator or small power producer pay any more or any  
14 less than is otherwise just and reasonable in terms of the utility  
15 receiving the reasonable rate of return for providing service to  
16 those kinds of users. However, unreasonable rate structure  
17 impediments, such as unreasonable hook up charges or other  
18 discriminatory practices, would not be allowed.

19  
20 The conferees use the phrase “not discriminate against  
21 cogenerators or small power producers” because they were  
22 concerned that the electric utility’s obligations to purchase and sell  
23 under this provision might be circumvented by the charging of  
24 unjust and non-cost based rates for power solely to discourage  
25 cogeneration or small power production.

26 H.R. Rep. No. 95-1750, at 98 (1978) (Conf. Rep.).

27 For qualifying facilities with a generation capacity of 100 kW or less,  
28 FERC regulation requires that each utility have a standard rate of purchase.<sup>10</sup> This  
29 provision encompasses many of the net-metering-eligible customers under

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<sup>9</sup> 18 C.F.R. § 292.305(c)(1) (emphasis added).

<sup>10</sup> 18 C.F.R. § 292.304(c)(1) (2014).

1 Wisconsin law, including customers that would be impacted by the Company's  
2 proposals.

3

4 **Q. What are the impacts of these new and revised charges on customer**  
5 **generators?**

6 A. These impacts are significant, adverse, and unjustified. RENEW-Wisconsin  
7 witness Vickerman has calculated these impacts and presented the results in his  
8 testimony (Direct-RENEW-Vickerman). I have reviewed and concur with his  
9 findings.

10

11 **THE COMPANY PROPOSAL TO ALTER TERMS**

12 **FOR CUSTOMER GENERATORS**

13 **Q. What other changes does the Company propose for customer generators?**

14 A. The Company proposes to consolidate its several customer generator rates into  
15 fewer rates. In the process, the Company seeks to impose the charges that I just  
16 discussed, and to materially and adversely alter the terms and conditions  
17 applicable to customer generators. The key elements of this part of the  
18 Company's attack on customer generation are (1) a substantial, unjustified, and  
19 discriminatory change in the rates that apply to customer generation exported to  
20 the grid either as excess in net metering or as the so-called "buy-back" rate, (2) a  
21 shift from annual to monthly netting of generation and consumption balances for  
22 customer generators in order to diminish the value received from such generation,

1 and (3) a new requirement that customer generation be owned by customers  
2 directly.

3

4 **Q. Please describe the proposed changes in buy-back and net metering credit**  
5 **for excess generation.**

6 A. The Company proposes to migrate the rates for net energy production or sale to  
7 the utility for all customer generators to an LMP-based rate. The rate is composed  
8 of the Company's forecast of MISO LMP rates, plus a "marginal transmission  
9 cost" value, plus an adjustment for line losses based on the loss factor cited for  
10 general service secondary service time of use customers. For net metering  
11 customers who previously enjoyed bill credits at the full retail rate for excess  
12 generation, with netting on an annual basis, this amounts to a proposed 70%  
13 reduction of the value of the customers' exported energy. In proposing to apply  
14 this LMP-derived rate to buy-back, feed-in tariff, and other direct sale rates, the  
15 Company is essentially proposing an end-run on other processes used to set the  
16 appropriate avoided cost rate for qualifying facilities.

17

18 **Q. How does the Company calculate the costs and benefits of electricity supplied**  
19 **by customer generators?**

20 A. The total basis for the Company's calculation of the costs and benefits of  
21 electricity lies in the fundamental—and fundamentally flawed—assumption that  
22 net metering credit for customer-generated electricity is a subsidy to the extent  
23 that it exceeds the forecast LMP price of energy with a small marginal

1 transmission credit and, inexplicably, the loss factor cited for general service  
2 secondary service time of use customers. Company witnesses Rogers and  
3 O'Sheasy confirm that no other values were considered or assigned to customer  
4 generation.<sup>11</sup>

5 The Company provides no explanation as to why it believes that the  
6 adjusted seasonal LMP price reflects the full value of solar electricity. The  
7 Company assumes that the avoided cost value of customer-generated electricity is  
8 this price, an assumption inconsistent with the Company's Wisconsin and federal  
9 law obligations to set reasonable rates for avoided costs from qualifying facilities  
10 and to ensure that the basis of any proposed standby charge is narrowly tailored  
11 and expressly tied to costs imposed by the customer-generator. The Company is  
12 essentially trying to make an end run on its obligation to assess only cost-based  
13 rates and to calculate true avoided costs.

14

15 **Q. Do Federal regulations under PURPA provide guidance as to how avoided**  
16 **costs should be set?**

17 A. Yes. The FERC only requires that utilities pay the avoided cost for power  
18 purchases, although utilities and customers can independently negotiate higher

---

<sup>11</sup> 1-RENEW-INT-14 (Ex.-RENEW-Rabago-20, PSC REF # 213864): "The Company's accounting of the benefits provided by customer self-generation is presented in the buy-back rates listed in Exhibit Rogers-11, Schedule 7." See also 2-RENEW-INT-10 (Ex.-RENEW-Rabago-21, PSC REF # 214127), in which witness O'Sheasy lists bill savings as the only benefit of distributed customer generation.



1 rates.<sup>12</sup> This avoided cost rate must, to the extent practicable, take into account,  
2 inter alia:

3 “(2) The availability of capacity or energy from a qualifying  
4 facility during the system daily and seasonal peak periods,  
5 including:

6 (i) The ability of the utility to dispatch the qualifying  
7 facility;

8 (ii) The expected or demonstrated reliability of the  
9 qualifying facility;

10 (iii) The terms of any contract or other legally enforceable  
11 obligation, including the duration of the obligation, termination  
12 notice requirement and sanctions for non-compliance;

13 (iv) The extent to which scheduled outages of the  
14 qualifying facility can be usefully coordinated with scheduled  
15 outages of the utility's facilities;

16 (v) The usefulness of energy and capacity supplied from a  
17 qualifying facility during system emergencies, including its ability  
18 to separate its load from its generation;

19 (vi) The individual and aggregate value of energy and  
20 capacity from qualifying facilities on the electric utility's system;  
21 and

22 (vii) The smaller capacity increments and the shorter lead  
23 times available with additions of capacity from qualifying  
24 facilities; and

25 (3) The relationship of the availability of energy or capacity from  
26 the qualifying facility as derived in paragraph (e)(2) of this section,  
27 to the ability of the electric utility to avoid costs, including the  
28 deferral of capacity additions and the reduction of fossil fuel use;  
29 and

30 (4) The costs or savings resulting from variations in line losses  
31 from those that would have existed in the absence of purchases

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<sup>12</sup> 18 C.F.R. § 292.304(a)(2).

1 from a qualifying facility, if the purchasing electric utility  
2 generated an equivalent amount of energy itself or purchased an  
3 equivalent amount of electric energy or capacity.”<sup>13</sup>  
4

5 **Q. What is the Company’s proposal regarding the netting period for net**  
6 **metering customers?**

7 A. The Company proposes to change all net metering from annual net metering, in  
8 which monthly credits are rolled forward for a year, to monthly net metering, in  
9 which credits from excess generation would be zeroed out in each billing period.  
10

11 **Q. What would be the impact of this proposed change?**

12 A. While the impact would vary from customer to customer, it would be negative for  
13 virtually all net metering customers. Solar generation output varies over the  
14 course of the year. Solar customer generators size their systems to produce excess  
15 bill credits during the longer, sunnier days of summer to help offset energy  
16 consumption during the winter. The excess generation in summer serves other  
17 system customers during the time when the system-wide cost of meeting demand  
18 is the greatest. Monthly netting eliminates the benefits of this excess on-peak  
19 generation for customer generators and the system at large. For existing customers,  
20 this change takes more value out of their investment. For future customers, it will  
21 reduce the market for distributed generation and the size of any systems installed.  
22 In effect, the change would limit a valuable peaking and intermediate solar

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<sup>13</sup> 18 C.F.R. § 292.304(e).

1 generator to baseload demand—a waste of effort and investment for customers  
2 and non-solar customers as well.

3

4 **Q. How does the Company justify the proposed change to monthly netting?**

5 A. In a twist of illogic and obfuscation, the Company explains that “it is appropriate  
6 to calculate the net generation monthly” because “[t]he buy-back rates, listed in  
7 Ex.-WEPCO WF-Rogers-11 Schedule 7, are seasonal.” Of course, the fact that  
8 LMP based energy rates can be seasonally differentiated is no explanation for  
9 why the netting period for customer generation should be monthly, rather than  
10 annual.<sup>14</sup> The Company confirmed that it had done no analysis of the fiscal  
11 impact of this proposal to move to monthly netting.<sup>15</sup>

12

13 **Q. What does the Company propose regarding ownership requirements?**

14 A. The Company proposes to forbid customers who use leases to finance and acquire  
15 their rooftop solar systems from participating in net metering and other customer  
16 generation tariffs.

17

18 **Q. What impact would the proposed change in the ownership requirements**  
19 **have?**

20 A. The likely impact would be elimination of the option for customers to lease rather  
21 than buy their solar or other distributed generation systems. This will reduce the  
22 market for distributed generation to those who can afford to buy or finance

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<sup>14</sup> 1-RENEW-INT-28 (Ex.-RENEW-Rabago-22, PSC REF # 213877)

<sup>15</sup> 3-RENEW-RFP-1 (Ex.-RENEW-Rabago-23, PSC REF # 213933)

1 themselves. It is a regressive policy that will deny middle-income and low-income  
2 customers, as well as churches and non-profit organizations the opportunity to  
3 participate in the self-generation market.  
4

5 **Q. How does the Company justify its proposed change in the ownership**  
6 **requirement?**

7 A. The Company supports its proposed change in the ownership requirements for  
8 customer generation systems with hubris. The sole justification cited is a staff  
9 memorandum that Commission legal staff explains cannot be interpreted as a  
10 position taken by the Commission itself. In my 24 years in electric utility  
11 regulation, I am stunned that a utility would seek to sneak a major and legally  
12 complex policy change of this nature into a proposed tariff amendment in such a  
13 fashion.<sup>16</sup>  
14

#### 15 VALUE OF SOLAR ANALYSIS

16 **Q. Has the Company performed any analysis of the value to the utility and its**  
17 **ratepayers associated with installed distributed solar energy capacity in its**  
18 **service territory as support for its direct purchase or demand/standby**  
19 **charges?**

20 A. The Company performed no such analysis in conjunction with its preparation for  
21 this rate application. The Company commissioned a fairly comprehensive analysis  
22 of the value to the utility of distributed solar photovoltaic (PV) generation in 2009.  
23 Titled "PV Value Analysis for WE Energies," and dated October 2009, the report

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<sup>16</sup> 2-CUB-Inter-11 (Ex.-RENEW-Rabago-24, PSC REF # 213273)

1 showed substantial value—in excess of \$0.14/kWh—in all locations studied from  
2 distributed solar PV.<sup>17</sup> The report was constrained to not analyze generation  
3 capacity or to consider effective load matching capacity beyond the single peak  
4 hour. In addition the study analyzed value at only a few locations.

5  
6 **Q. Does the Company explain why it did not rely upon or discuss the PV Value**  
7 **Analysis for WE Energies study?**

8 A. No. The Company offers no explanation as to why it completely ignores the PV  
9 Value Analysis report in this rate application and in the accompanying testimony  
10 and other filings. However, the fact of the report makes it clear that the Company  
11 knows how such analysis is performed and that distributed solar generation has  
12 value to the utility and its ratepayers that likely significantly exceeds the value  
13 assumed in the current rate application. When asked directly to provide data and  
14 evidence to support its assertion in this case that the utility “only saves its avoided  
15 cost of generation,” when customer generators are deployed and operate, witness  
16 O’Shea offered only a general statement about standby obligations.<sup>18</sup>

17  
18 **Q. What factors should the Company have considered in valuing distributed**  
19 **generation and in setting demand/standby charges?**

20 A. The Company should have considered several generation and T&D benefits of  
21 solar, such as:

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<sup>17</sup> 1-RENEW-RFP-1 (Ex.-RENEW-Rabago-25, PSC REF # 213884)

<sup>18</sup> 2-RENEW-RFP-9 (Ex.-RENEW-Rabago-26, PSC REF # 214144)

- Energy savings by each hour in the year, based on not having to purchase or generate energy from the most expensive units in the Company's system at peak or near-peak times of the day;
- Reduced system losses, based on a reduction in marginal losses;
- Generation capacity savings – the ability to defer or avoid the need for new, expensive fossil fuel-fired power plants – calculated using effective load carrying capability or similar analysis;
- Reduced strain on the Company's transmission and distribution capacity;
- Grid support services, which would require an evaluation of the ancillary services value of solar;
- Financial benefits, including a fuel price hedge and market price response benefits;
- Grid security benefits from increased stability and resiliency on the grid;
- Quantifiable environmental benefits, such as reduced carbon intensity in the Company's service territory and other residual (beyond environmental compliance) benefits; and
- Quantifiable societal benefits, such as increased tax revenues and economic development wherever solar installations occur.

1   **Q.    Aren't many of these benefits found with any generation investment? Why**  
2       **should they be considered when evaluating the benefits of customer-owned**  
3       **solar generation?**

4    A.    When the Company proposes a new gas plant, for example, it weighs the costs  
5       and benefits of that proposal against alternatives – the energy and capacity costs,  
6       accounting for costs of fuel, construction costs, line losses, upgrades needed to the  
7       transmission system, hedging benefits of fuel diversity and environmental costs –  
8       to justify the cost of the plant on ratepayers. These same factors should be  
9       evaluated when determining what costs can appropriately be recovered from  
10      customers who are placing valuable solar electricity on the grid. Comprehensively  
11      addressing these benefits, and the embedded or alternative resource costs that they  
12      can help the utility avoid, is required in order to make more informed and  
13      economically efficient resource planning and deployment decisions. I have used  
14      value of solar analysis as a utility executive at Austin Energy to inform resource  
15      pricing decisions, incentive-setting decisions, and rate design decisions.

16           My point in this testimony is that the consideration of the full range of  
17      benefits and costs associated with customer behavior such as self-generation with  
18      solar PV is also essential to the proper design of a demand/standby charge  
19      proposed under the justification of holding non-solar customers harmless. That is,  
20      rates applicable to distributed solar customers should not improperly discriminate  
21      against the solar customer, the non-solar customer, or the utility. Actual full cost  
22      and benefit analysis is the best defense against such an undesirable result, just as  
23      it informs economically efficient ratemaking and resource planning decisions.

1

2 **Q. What costs should be assessed?**

3 A. As discussed in the Interstate Renewable Energy Council's Guidebook for  
4 calculating the costs and benefits of distributed solar generation, I believe it is  
5 appropriate to assess utility costs as well (Ex.-RENEW-Rabago-27). These costs  
6 include direct utility costs and may include an assessment of lost revenues. I note  
7 that assumptions about administrative costs (such as billing costs) should reflect  
8 automated billing systems. Interconnection costs incurred solely by the customer  
9 should not be included. And finally, I reiterate that any integration costs should  
10 not be based on unrealistic assumptions about solar generation penetration rates.

11

12 **Q. Are there any recent precedents in other states to support adopting this kind**  
13 **of analysis, which consider the benefits and costs that you have outlined?**

14 A. Yes. In 2013, the State of Minnesota enacted a law that required the Minnesota  
15 Department of Commerce to develop a methodology for valuing solar. After a  
16 widely-praised stakeholder process that was transparent and that engaged dozens  
17 of utilities, business and government representatives, advocates and concerned  
18 citizens, the Minnesota Department of Commerce published its solar valuation  
19 methodology on January 30, 2014. This methodology is attached as Ex.-RENEW-  
20 Rabago-12.

21

22

23



1     **Q.     What are the major features of the Minnesota Value of Solar Methodology?**

2     A.     Key aspects of the methodology include:

- 3             •     A standard solar photovoltaic rating convention;
- 4             •     Methods for creating an hourly solar production time-series, representing the
- 5                 aggregate output of all solar systems in the service territory per unit capacity
- 6                 corresponding to the output of a solar resource on the margin;
- 7             •     Requirements for calculating the electricity losses of the transmission and
- 8                 distribution systems;
- 9             •     Methods for performing technical calculations for avoided energy, effective
- 10                generation capacity and effective distribution capacity;
- 11            •     Economic methods for calculating each value component (e.g., avoided fuel
- 12                cost, capacity cost, etc.); and
- 13            •     Requirements for summarizing input data and final calculations in order to
- 14                facilitate SCC and stakeholder review.

15  
16    **Q.     Why do you recommend the Commission’s attention to the methodology?**

17    A.     The methodology stands in stark contrast to the approach used by the Company in

18             its direct purchase and demand/standby charge proposals. The Minnesota Value

19             of Solar Methodology demonstrates the comprehensive, objectively verifiable

20             approach that can be developed when a broad range of stakeholder and expert

21             opinions are focused on the solar valuation issue. A proper standby charge should

22             include proper valuation of all resource options, including solar. The Minnesota

23             Methodology represents a detailed and well-documented example that the

1 Company could use to guide its work in correcting the deficiencies in its current  
2 processes.

3

4

#### ADMINISTRATIVE EFFICIENCY

5 **Q. What is the revenue impact of the proposed standby charge?**

6 A. The Company offers no detail or comparative analysis of revenue shortfalls such  
7 as those that are argued to justify the demand and facilities charges that it  
8 proposed. The Company has not indicated whether it considers the amount of  
9 these shortfalls material or cannot offer any evidence of objective materiality or  
10 threat to the Company's financial integrity.<sup>19</sup> In fact, data submitted by the  
11 Company in response to an interrogatory reveals that the total annual revenue  
12 expected from both the proposed facilities and demand charges on distributed  
13 generators who net meter will be \$116,567. To put this sum in perspective, this  
14 amount represents .0039% of total proposed 2015 revenues, and about .28% of  
15 the proposed rate increase for 2015. Given the market and policy import of the  
16 issues underlying the proposed changes, and the lack of analytical rigor  
17 underlying the Company proposals, prudence and administrative efficiency argue  
18 that these issues should not be addressed in this rate increase, but in a dedicated  
19 proceeding at a later date.

20

21

22

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<sup>19</sup> 2-RENEW-INT-5 (Ex.-RENEW-Rabago-28, PSC REF # 213932)

1                   **THE COMPANY'S ARITHMETIC CALCULATIONS**

2   **Q.     Are you asserting that there are problems with the Company's calculations?**

3   A.     I find no errors in the simple arithmetic of the Company's calculations. The  
4           problem lies in the fact that none of the numbers used by the Company have been  
5           demonstrated to bear any factual relevance to solar customer-generators, and  
6           therefore, they fail to meet the standard of the law. I fully understand that the  
7           Company is charged with a difficult burden of proof and must perform an  
8           immense amount of work to prepare for a biennial review of rates. But it appears  
9           that on this solar standby charge to be applied to very few actual solar customer-  
10          generators, the Company simply dropped the ball. The Company completely  
11          failed in adducing factual evidence that demonstrates that its proposed charges are  
12          based on actual costs related to the operation of solar customer generation  
13          facilities.

14               The Company offers no cost of service data, no data associated with actual  
15               solar generators, no data associated with transmission and distribution benefits of  
16               solar generators, and no reasonable justification for imposing demand and standby  
17               charges on those customers. It is an astounding failure of basic ratemaking.

18  
19   **Q.     Does this conclude your testimony?**

20   A.     Yes.